Nothing Compares
NORTH CAROLINA

February 1, 2016

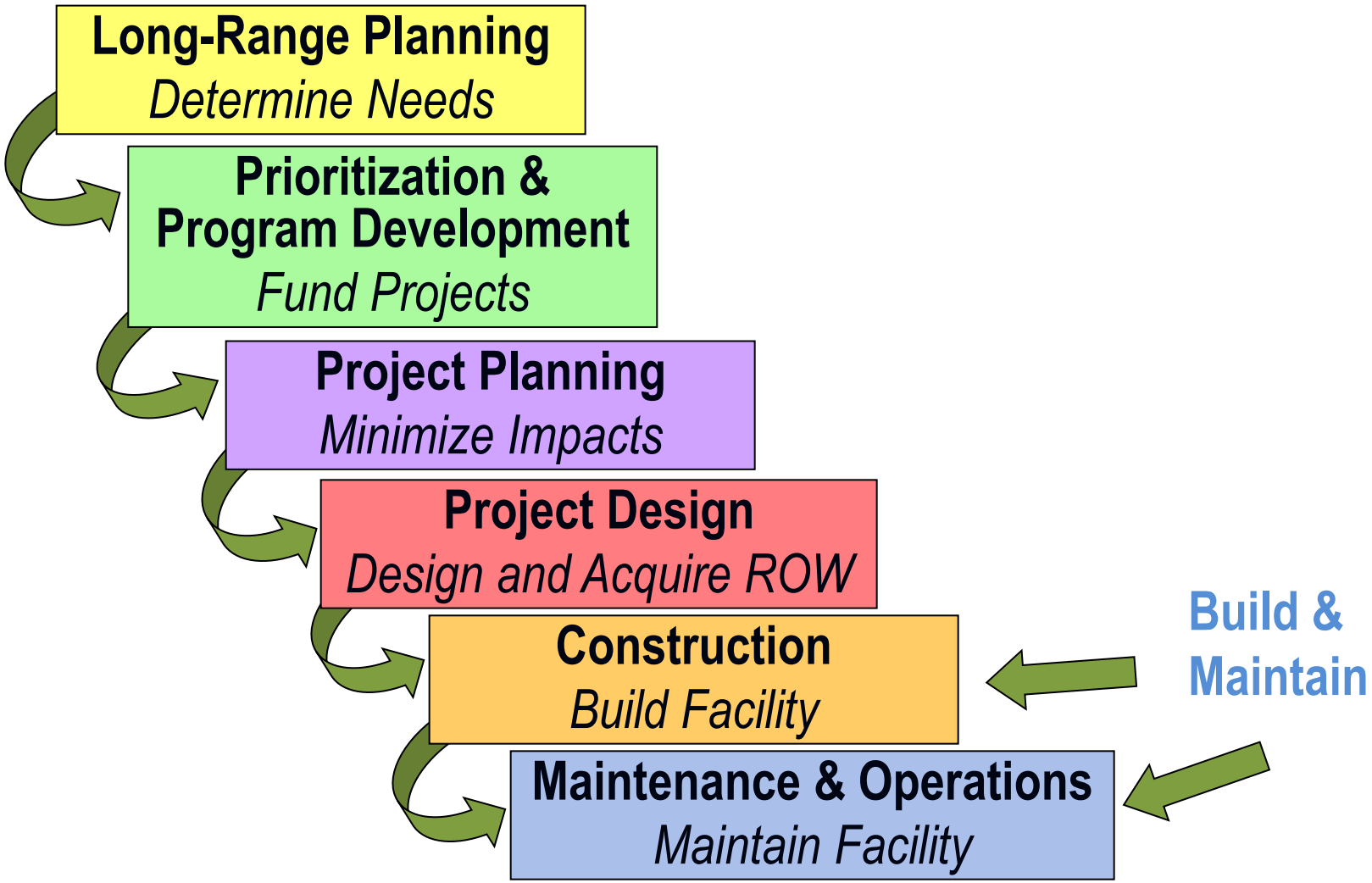
House Select Committee on Strategic Transportation Planning and Long Term Funding Solutions, Primary System Subcommittee

Mike Holder

How to Build a Road

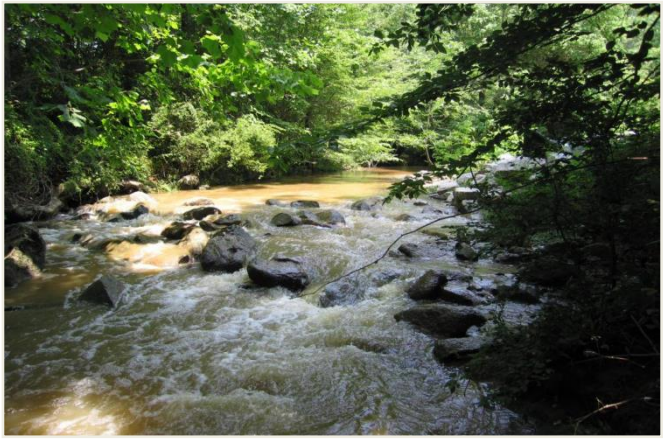
Mike Holder

Transportation Project Life Cycle

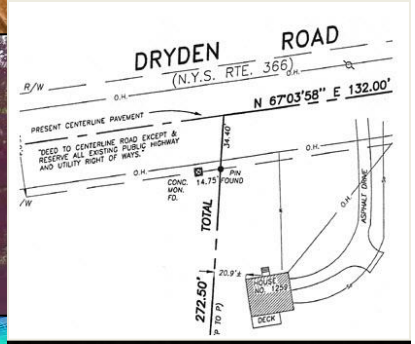


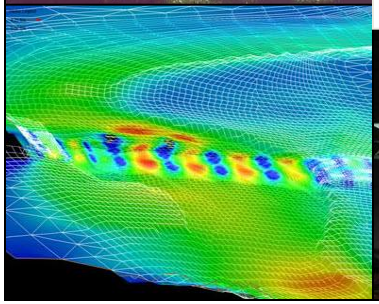
Project Planning Major Steps

- Develop preliminary highway designs within corridors
- Evaluate impacts
- Coordinate with project stakeholders (agencies & public)
- Select preferred alternate
- National Environmental Policy Act (NEPA) & State Environmental Policy Act (SEPA)



Project Design Major Steps





- Location and Surveys provides survey information
- Highway design is finalized
- Construction limits are determined
- Right of Way obtained
- Project advertised for Let

Construction Process – Typical Steps

1) Surveying

2) Clearing

3) Erosion Control

4) Bottom Drainage

5) Rough Grading

6) Bridge Foundations

7) Top Drainage

8) Bridge Beams and Deck

9) Fine Grading

10) Base and Pave

11) Guardrail

12) Markings, Signs, Signals

Survey

Clearing

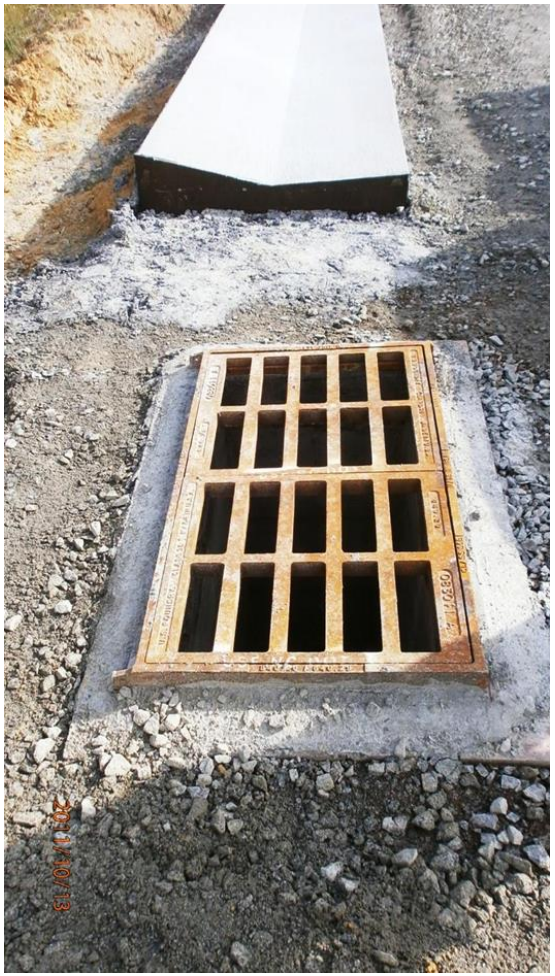
Erosion Control

Bottom Drain Pipe and Culverts

Rough Grading

Bridge Foundations

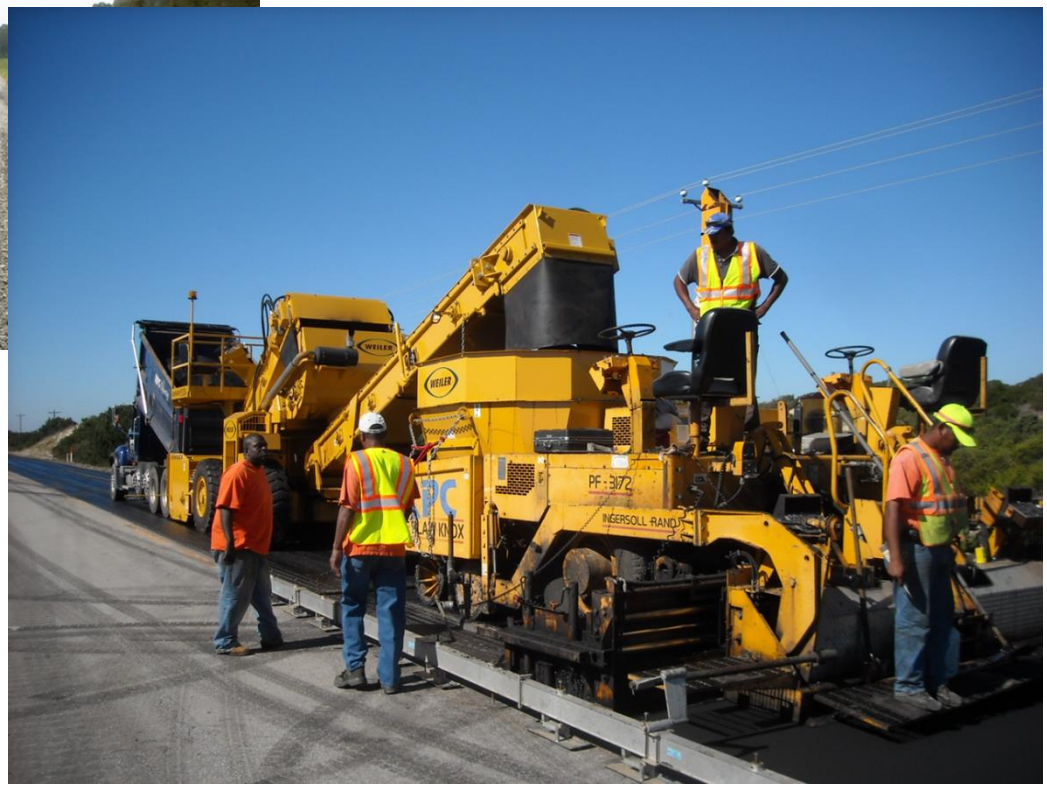
Top Drainage



Bridge Beams and Deck

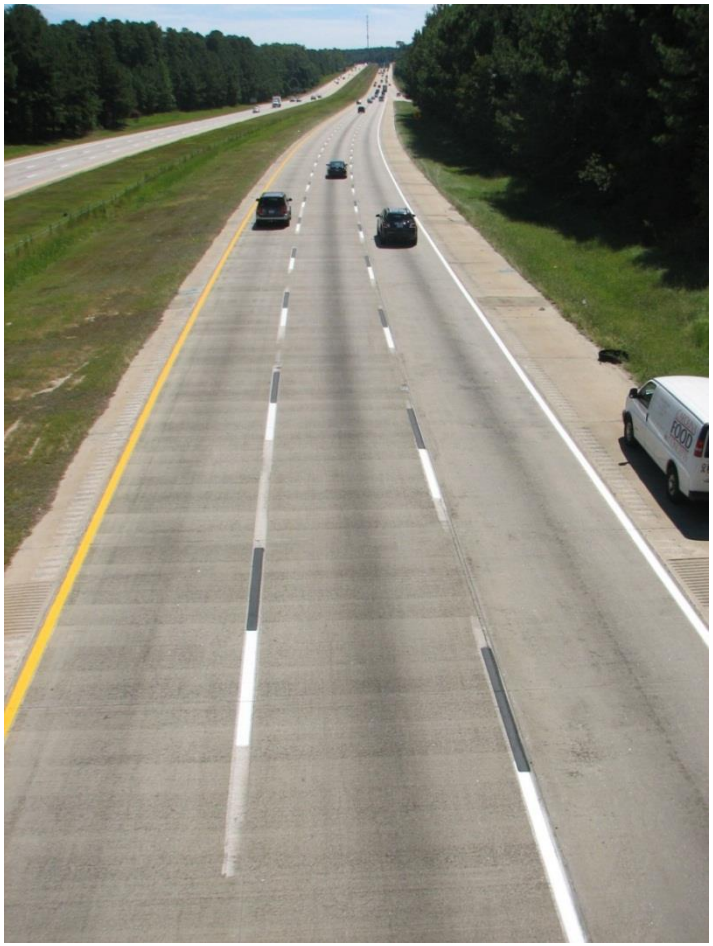
Fine Grading

Base and Pave



Guardrail

Pavement Markings, Signs, Signals



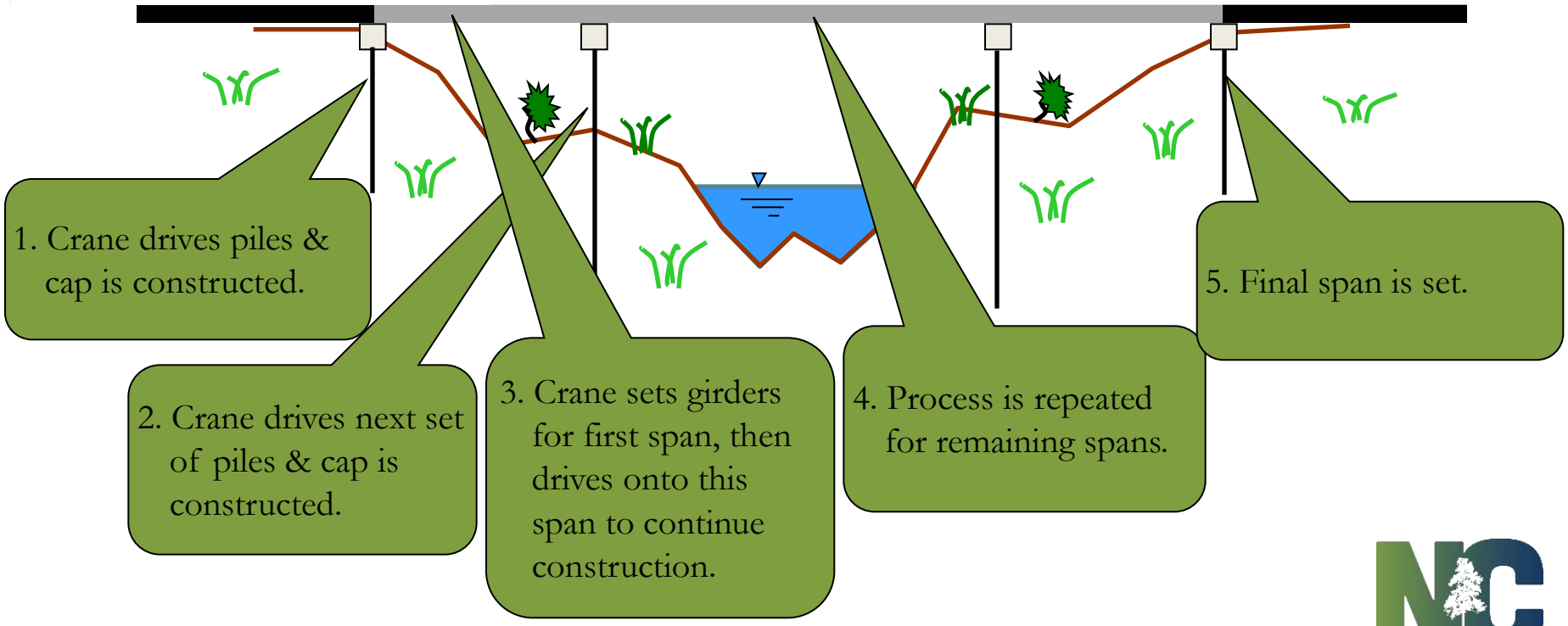
Typical Project Construction Durations

- New Location: 3 to 4 years
- Major Pavement Rehabilitation: 2 to 3 years
- Urban Widening: 2 to 3 years
- Major Bridge Projects: 2 to 4 years
- Bridge Replacement (low impact): 6 to 12 months

Construction Challenges - East

- Weak Soils
- Wetlands/ Environmental Impacts
- Bridge access requiring work bridges or barges
- Positive Drainage – Flat Landscape
- Top Down construction

Top-Down Construction



Construction Challenges - Piedmont

- Urban, Traffic Congested Areas
- Night Work
- Traffic Phasing
- Utility Conflicts
- Clay Soils
- Degradable Rock

Construction Challenges - Mountains

- Hard Rock
- Steep Terrain
- Trout Streams
- Shorter Working Season
- Tourist Seasonal Congestion
- Material Delivery on Curvy Roads

Maintenance

- Pavement Repair
- Resurfacing
- Drainage installation and improvements
- Mowing
- Snow and ice removal
- Vegetation management
- Litter and debris removal
- Sign installation and replacement
- Pavement markings
- Signal installation and repair
- Bridge repair and replacement

Questions?